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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,555	06/24/2005	LackSu Han	T3502-10303US01	5358
181 7590 10/08/2008 MILES & STOCKBRIDGE PC 1751 PINNACLE DRIVE SUITE 500 MCLEAN, VA 22102-3833			EXAMINER STIMPert, PHILIP EARL	
			ART UNIT 3746	PAPER NUMBER
			NOTIFICATION DATE 10/08/2008	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/540,555

Applicant(s)

HAN, LACKSU

Examiner

Philip Stimpert

Art Unit

3746

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/24/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6, 7, 10 and 12-14 is/are rejected.
- 7) ☐ Claim(s) 4, 5, 8, 9, 11 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB08)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date 1/26/2007, 2/22/2007

DETAILED ACTION

Claim Objections

1. Claim 9 is objected to because of the following informalities: the fifth line of the claim contains the characters "s;," which do not appear to be part of any word of the claim.
2. Claim 13 is objected to because lines 4-5 recite "a pair of concrete cylinder."
3. Appropriate correction or clarification is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claims 2 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
6. Lines 3-4 of the claim recite "bent downwards in the form of embracing the friction surface." This recitation fails to adequately describe the structure being claimed.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-3, 6, 7, 10, and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Condon et al. (US 2003/0215344).

9. Regarding claim 1, Condon et al. teach a sliding motion structure for a concrete pump having pistons (46) in two cylinders (42, 44) which discharge concrete through an S-shaped gate valve (1). In particular, Condon et al. teach a plane fixed member (13) including a wear plate (13) which is connected to the ends of the cylinders (42, 44, see Figs. 1, 2) and has a pair of throughhole portions (47) connected to the insides of the cylinders, a pair of coupling tubes (35) which are connected to the wear plate (13) along the throughhole portions (47) and have inlet ports (the throughholes in 17) and comprise first friction members (37) which are formed of tungsten carbide (paragraph 16). Condon et al. also teach second friction member (27) formed of tungsten carbide (paragraph 16) and connected on the upper surface of the wear plate (13) at the same height as the first friction members (37), and a ring-shaped movable member (22) including a ring-shaped connecting pipe (22) which is connected to the ends of the S-shaped gate valve and a third friction member (28) which is formed of tungsten carbide (paragraph 16) and connected to the first and second friction members tightly along the ends of the connecting pipe in the same length (see Fig. 3).

10. Regarding claim 2, Condon et al. teach a protrusion (below 39, in Fig. 7) formed downwards along the internal circumference area of the lower part of the coupling tubes, the protrusion guiding the coupling tubes to the upper part of the throughhole portions of the wear plate (via the rings 35).

11. Regarding claim 3, Condon et al. teach that the coupling tubes (35) of the fixed member are provided with a standard protrusion that is formed upwards along the external circumference area of the upper part of the coupling tubes (the protrusion is seen at the axial overlap between 35 and 37 in Fig. 7), the standard protrusion guiding the connection between the coupling tubes (35) and the first friction members (37).

12. Regarding claim 6, Condon et al. teach that the wear plate (13) is connected to the ends of the cylinders by a holder (23) which is fixed by bolts on the ends of the cylinders and holding the circumference area of the wear plate (see Fig. 2, paragraph 31).

13. Regarding claim 7, Condon et al. teach bolt fixing holes (23) penetrating the circumference of the wear plate (13) by which the wear plate is connected to the ends of the cylinders.

14. Regarding claim 10, Condon et al. teach that the external end of the third friction member (28) is bent such that it has the described shape (see Fig. 7).

15. Regarding claim 13, Condon et al. implicitly teach a method for manufacturing a sliding motion structure for a concrete pump comprising the steps of

- a. fabricating a wear plate (13) with a pair of throughhole portions (47) connected to the insides of a pair of concrete cylinders (42, 44),
- b. fabricating coupling tubes (35) having inlet ports to be tightly inserted to the throughhole portions of the wear plate,
- c. connecting first friction members (37) which are formed of tungsten carbide to the upper part of the coupling tubes (35)

- d. connecting the coupling tubes combined with the first friction members to the throughhole portions of the wear plate, the first friction members (37) being protruded to the upper part of the wear plate,
 - e. fabricating a second friction member (27) with tungsten carbide and inserting the second friction member between the first friction members (37) in the wear plate
 - f. connecting a connecting member (portion of 13 to which 27 mounts) to the lower part of the second friction member, the upper surfaces of the first and second friction members being on the same plane, and
 - g. connecting (by integral formation) the connecting member combined with the second friction to a part of the wear plate between the first friction members.
16. Claim 14 is rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Condon et al.
17. Regarding claim 14, Condon et al. implicitly teach the connecting the wear plate, first and second friction members, to the ends of the concrete cylinders. One of ordinary skill would expect that this would be done after assembly of the wear plate to the first and second friction members, so as to avoid working within the confines of the pump. Thus if the order is not explicitly or implicitly taught, it would have been obvious to one of ordinary skill in the art at the time of the invention.

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

19. Claim 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Condon et al. in view of Majagi et al. (US 6,521,353).

20. Condon et al. teach the limitations of claim 1 from which claim 12 depends, as discussed above. Condon et al. do not teach the specific materials and percentages required by claim 12. Majagi et al. teaches a wear resistant material which can comprise up to about 80% tungsten carbide (WC, see col. 3, ln. 35-45), as well as amounts of TiC, TaC, and TaNBC falling within the specified ranges (see further col. 3, ln. 60-65, and Tables 2 and 3). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a wear resistant material having the materials specified in the ranges specified by the claim as taught by Majagi et al. in the sliding motion structure of Condon et al., in order to take advantage of the wear resistance of such a material.

Allowable Subject Matter

21. Claims 4, 5, 8, 9, 11 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

22. The following is a statement of reasons for the indication of allowable subject matter: the reinforce members of claims 4 and 15, the friction blocks of claim 11, and the connecting member connected by bolts to the wear plate of claim 8 are not shown in the prior art of record.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip Stimpert whose telephone number is (571)270-1890. The examiner can normally be reached on Mon-Fri 7:30AM-4:00PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/
Supervisory Patent Examiner, Art
Unit 3746

/P. S./
Examiner, Art Unit 3746
30 September 2008